ARIZONA HOUSE OF REPRESENTATIVES
Fifty-second Legislature – First Regular Session

HOUSE AD HOC COMMITTEE ON PEDIATRIC AUTOIMMUNE NEUROPSYCHIATRIC DISORDER

Report of Interim Meeting
Thursday, January 7, 2016
House Hearing Room 1 -- 10:00 a.m.

Convened 10:11 a.m.
Recessed
Reconvened
Adjourned 11:13 a.m.

Members Present
Representative Heather Carter, Chair
Representative Randall Friese
Shelly Avila*
Tess Burleson
Dr. Michael Daines
Kate Fleck
Kari Kling
Lee Miller
Dr. Suraj A. Muley
Molly Ochoa
Dr. Sydney Rice
Dr. Mark Ross
Paul Ryan
Dan Twibell

Members Absent
Representative Vince Leach
Dr. Melanie Alarcio
Charles Bassett
Dr. Cari Christ
Dr. Jay Cook
Dr. Fayez Ghishan
Dr. Susan Swedo

*With approval from the Speaker, Lisa Betts attended as a designee for Shelly Avila.

Agenda
Attachment 1

Request to Speak
None

Name	**Organization**	**Attachments** (Handouts)
Mr. Paul Ryan	Citizen	2

Sandy Kelley

Sandy Kelley, Chairman Assistant
January 8, 2016

(Original attachments on file in the Office of the Chief Clerk; video archives available at http://www.azleg.gov)

Interim agendas can be obtained via the Internet at http://www.azleg.state.az.us/InterimCommittees.asp

ARIZONA HOUSE OF REPRESENTATIVES

INTERIM MEETING NOTICE
OPEN TO THE PUBLIC

HOUSE AD HOC COMMITTEE ON PEDIATRIC AUTOIMMUNE NEUROPSYCHIATRIC DISORDER

Date: **Thursday, January 7, 2016**

Time: **10:00 A.M.**

Place: **HHR 3**

AGENDA

1. Call to Order
2. Opening Remarks
3. Review of Subcommittee Findings
   - Standard of Care
   - Center of Excellence
   - Child Safety
4. Public Testimony
5. Closing Comments
6. Adjourn

Members:

Representative Heather Carter, Chair
Representative Randall Friese
Representative Vince Leach
Dr. Melanie Alarcio
Shelly Avila
Charles Bassett
Tess Burleson
Dr. Cara Christ
Dr. Jay Cook
Dr. Michael Daines
Kate Fleck
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Dan Twibell

1/5/16
RA

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Attachment 1

Print

Dec 15, 2015 02:08 PM EST

Strep A: Recurrent Infections Affect The Brain

A group of researchers from Columbia University Medical Center and the University of Minnesota have discovered how recurrent infections of Strep A in children can trigger immune cells to enter the brain, which causes inflammation that can lead to autoimmune neuropsychiatric disorders.

The study was done on mice, finding that immune cells travel along odor-sensing neurons that emerge from the nasal cavity, instead of breaching the blood-brain barrier directly. The findings could help develop improved diagnostic, monitoring and treatment methods for these disorders.

Group A Strep, also known as Strep A or "Streptococcus Agalactiae," is a bacterium that causes many different infections, most notably strep throat and impetigo. Recurrent infections of strep have been linked to several autoimmune neuropsychiatric disorders, including PANDAS - Pediatric Autoimmune Neuropsychiatric Disorders associated with Streptococcal infections - which can happen overnight and immediately, and include OCD and other Tourettes-like "tic" disorders, according to the Mayo Clinic.

When a person gets Strep A, the immune system ends up producing autoanitobodies that attack the body's own tissues. Strep A's bacterial cell wall confuses the immune system because it contains mimetic molecules that are similar enough to those in the human heart, kidneys, and brain tissue, according to Dritan Agalliu, an assistant professor in the department of Pathology and Cell Biology at CUMC.

Scientists were previously unaware about how these autoantibodies gained access to the brain, since normally brain vessels form the tightly bound blood-brain barrier that does not allow free movement of molecules, antibodies, or immune cells into the brain from the blood.

However, recurrent Strep A infections can trigger the body to produce Th17 cells, an immune cell that's somewhat of a Helper T Cell, in the nasal cavity. The researchers found that in Strep A-infected mice, these bacterial-specific Th17 cells move on the surface of axons from the olfactory system into the olfactory bulb of the brain, the portion that processes odor information.

"Once the Th17 cells enter the brain, they break down the blood-brain barrier, allowing autoantibodies and other Th17 cells to enter the brain and promote neuroinflammation," Agalliu said in a press release. "What's interesting is that we see abundant Group A Strep bacteria in the nose, but they never penetrate the brain. This is different from Group B Strep - the cause of bacterial meningitis - which causes neuroinflammation by entering the brain directly."

This discovery is a huge step for developing a test for definitively diagnosing PANDAS, which can currently only be diagnosed based on clinical symptoms and the presence of Strep A, or autoantibodies against brain proteins.

"We are also interested in exploring ways to treat the disorder by repairing the blood-brain barrier itself to prevent the entry of autoantibodies into the brain," Agalliu said.

Attachment 2

The findings were published in the Journal of Clinical Investigation.

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New Brain Map May Show Origins of Mental Illness

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